construction of railways, provision ought to be made for securing a uniform gauge, and whether it would be expedient and practicable to take measures to bring the railways already constructed, or in progress of construction, in Great Britain, into uniformity of gauge; and to inquire whether any other mode of obviating or mitigating the apprehended evil could be adopted; and to report the same to this House."

Her Majesty has since appointed Sir John Mark Frederic Smith, Lieutenant-Colonel of the Royal Corps of Engineers, late Inspector-General of Railways; George Biddle Airy, Esq., Astronomical Observator in her Majesty's Observatory at Greenwich; and Peter Barlow, Esq., Professor of Mathematics in the Royal Military Academy at Woolwich, to be her Majesty's Commissioners for the purpose stated.

INSTITUTION OF CIVIL ENGINEERS.

On Tuesday, June 24th, Sir John Rennie, president, in the chair, a paper was read by Mr. J. G. Bodmer, "On the advantages of working engines with high-pressure steam expansively and at great velocities."

The author based his observations upon the principle of a considerable area of piston being essential for taking advantage of the initiative impulse of highly elastic steam, in contradistinction to the idea of the percussive action which had some time ago found advocates. In order therefore to take advantage of this action, and be enabled to cut off the steam at an early period of the stroke, the piston at short intervals, and consequently making a great number of strokes within a given time, must travel over a limited distance, that as little as possible of the heat, and consequently of the elasticity, should be lost.

It has been generally acknowledged that the action of a short crank and rapid stroke is very disadvantageous to the framing and foundations of ordinary engines. Mr. Bodmer has in constructing his compensating engines concentrated the action, and confined the strain to the crank, connecting rod, and piston rod. By this construction he has been enabled to carry the expansive principle to such an extent, as to deliver the steam into the condenser almost in a state of mere vapour, or within 3lbs. of a vacuum. The saving of fuel must therefore be in proportion; and there must be a very considerable reduction of the actual weight of the machinery, and of the coals on board steam vessels on long voyages. The paper considered at great length the reasonings upon these principles, and in tabular forms gave the comparative results of this and the ordinary engines. The peculiar construction of the compensating engines was illustrated by several models and detailed drawings, shewing the peculiar action of the expansion valves, and the two pistons in each cylinder. The great difficulty encountered appeared to have been in the valves of the air-pumps, which were destroyed by the extreme rapidity of the action; this was provided for by constructing an air-pump without valves. By a peculiar arrangement of the air and water passages it became practicable to substitute for the ordinary cover a piston travelling through a very limited space, and for the air-pump bucket a solid piston travelling the full length of stroke. The valves were thus done away with, and the action of the engine became complete. This construction has been adopted with great success in several stationary and locomotive engines, and is now being applied to marine engines, to which it is peculiarly applicable, as it is of great importance to be enabled to work the Archimedian or screw propeller without the intervention of bands or wheel work.

Mr. J. Woods exhibited and explained the action of Siemens' chronometric governor. The centrifugal governor of Watt being acknowledged to be an imperfect instrument in consequence of its inability to adjust the valve to the altered circumstances of the load of the engine, Mr. Siemens invented the chronometric governor. The new instrument was stated to have been at work successfully for some time at Carpenter's Corn Mills, Shad Thames. It consists chiefly of a heavy pendulum which is allowed to move to a certain arc of vibration of chronometric revolutions, and it is connected with the horizontal pinion above, which therefore moves in union with it: an endless screw is geared in contact with the horizontal pinion, and is drawn by a constant weight in a horizontal direction: it has therefore a tendency to produce revolution of the pinion and pendulum. This horizontal screw must be turned by the engine at the exact velocity necessary to insure its running in gear with the pinion, driven at the constant velocity dependent on the length of pendulum; and should the engine succeed in turning the screw at the proper velocity no horizontal movement will take place, and the weight on the lever, before mentioned, continues a constant driving power independent of the engine, for overcoming the existence of the atmosphere and the friction of the pendulum. If the load, or the supply of power varies, a tendency to alter the speed of the horizontal shaft immediately commenced, and it takes up a new position, by having travelled faster or slower than the pendulum and its pinion, and it retains this altered position, and consequently the adjustment of the valve, by means of appropriate connecting levers, until the conditions of equilibrium of load and power are again varied.

The action of this governor is so sensitive, that no variation of the speed of an engine, when 40 per cent. of its load is thrown off, can be observed, for the entire change is performed in one fiftieth of the revolution of the fly-wheel; this change absorbs or adds a portion of the momentum of the pendulum, and slightly alters its arc of vibration, the limit of which is between 18° and 21°, and by the laws of pendulous motion this is shewn to effect the number of revolutions to the amount of only 8 per cent. of its velocity, and even that small variation in the extreme position of the pendulum ceases immediately the momentum is restored to its former condition.

This being the last meeting of the present session, the president addressed the members, with congratulations on the interesting character of the papers read the discussions at the meetings and the very full attendance of members and visitors; and impressed upon them the necessity of redoubled exertions in future in order to support adequately the elevated position which the Institution had attained. Mr. Walker, in a speech full of kind feeling, proposed a vote of thanks to Sir John Rennie for his devotion to the duties of president, his uniform attendance at the meetings, and the kindness and hospitality he invariably displayed to the members collectively and individually. The meeting then adjourned until the second Tuesday in January of the ensuing year.

In closing our notice of the proceedings during the session, we cannot omit a brief commendation of the energy and ability with which the present secretary, Mr. Manby, discharges the duties of his office, and materially conduces to the effectiveness of the association.

PRIZES IN ARCHITECTURE.

UNIVERSITY COLLEGE, LONDON.

The following is a list of the students who were rewarded after the recent examination:—

FIRST YEAR'S COURSE.

Fine Art.—Prize ..	Mr. G. Lamb.	
2nd Certificate ..	Mr. Fred. Chancellor	equal.
2nd ,, ..	Mr. John Seddon	equal.
3rd ,, ..	Mr. W. W. Deane.	
Science.—Prize	Mr. Frederick Chancellor.	
2nd Certificate ..	Mr. George Lamb.	
3rd ,, ..	Mr. W. W. Deane.	

SECOND YEAR'S COURSE.

Fine Art.—Prize ..	Mr. E. P. Boyce.
2nd Certificate ..	Mr. Charles Corbett.
3rd ,, ..	Mr. Howard Bankart.
Science.—Prize	Mr. C. Corbett.
2nd Certificate ..	Mr. T. O. Donaldson.
3rd ,, ..	Mr. Howard Bankart.
4th ,, ..	Mr. Edwin Ireland.

The Academy of Fine Arts, Philadelphia.—On the night of the 11th of June, this establishment was consumed by fire, an event that is ascribed to the act of an incendiary. Among the very few works saved are Gilbert Stuart's full-length portrait of Washington, West's "Death on the Pale Horse," Haydon's "Christ's Entry into Jerusalem," and Alston's "Dead Man Restored to Life."

LEVERINGTON CHURCH.

For some months past the church of Leverington, near Wisbech, has been undergoing repairs, which the fearful state of dilapidation into which it had fallen rendered necessary. These are now completed. The restorations, though they have not been so complete as they might have been, are yet very extensive, and have converted almost a ruin into a very interesting structure. We have not heard the exact cost which has been incurred, but believe the burden upon the parish is under 1,000*l.*, as the rector himself contributed 500*l.*

Leverington is a good specimen of architecture, and contains valuable examples of the early English, decorated, and perpendicular styles, the tower is early English; the spire above it rising altogether to the height of 162 feet, is decorated and pierced with small lights. The base of the spire is flanked by four octagonal turrets, which somewhat awkwardly serve the purpose of the pinnacle and flying buttress in Louth and other celebrated spires. The body of the church is built in the perpendicular style, and is upwards of 200 feet long; presenting a very open and light appearance. Before the late alterations, abuse upon abuse had been inflicted on the church. One part had been built off to form a coal-hole, at the expense of two beautiful perpendicular windows, one of which of elaborate design now forms a conspicuous feature in the west end. On the opposite side another large piece had been built off to form a vestry; and between these unsightly incumbrances a very mean gallery had been erected, immediately in front of a rich early English arch, with foliated capitals, supporting the east wall of the tower. All these blemishes have been removed, and, by the exertions of the Rev. H. Jackson, the curate, the windows have been restored, and the floor of the tower thrown open to the nave. The south side of the church has been almost entirely rebuilt; and two heavy brick buttresses, that seemed actually dragging the walls they were erected to support, have been taken down, and the architecture finished in its original taste. A new roof, braced by simple open work, has also been put up, and the whole church re-pewed, or rather re-seated. This last alteration will be as much appreciated by the inhabitants as any that has been made. No church had suffered more from the abuse of pewing, that grand abuse of English churches, than Leverington. Pews of the size of parlours encumbered its aisles, and even intruded into the middle width of the nave. Mr. Jackson has, however, fought and conquered the prejudices that were raised against seating the church, and the advantages will, we are sure, be appreciated even by those most hostile to it in the first instance.

Leverington has several claims upon the antiquary. The font, which has been engraved in Van Voorst's work, is one of the finest perpendicular fonts in England. It is octangular, and 8 niches with figures form its sides. The pillar is similarly ornamented, with eight emblems at its foot. Leverington has besides, the rather uncommon ecclesiastical curiosity of two credence-tables, attached to two portions of the aisles, which were formerly chapels. They are perpendicular, like most other parts of the edifice, and are in excellent preservation. The piscina of each chapel is also preserved. The south porch is one of the most remarkable parts of the building, and is, at the same time, one of the most chaste and simple of its beauties. Its buttresses are niched, its pediment crocketed, and a very rich open parapet runs along the ridge of its stone roof. Over it is a parvise chamber whose sloping stone roof is broken into the pointed arch by the latter springing from nearly the centre of the slope, the space between the point of the arch and the meeting of the roof being filled with a ring of stone. This roof is perhaps singular in ecclesiastical architecture. There is also a piscina in this chamber.

There was formerly one entire window of rich painted glass in this church, but it has been suffered to be strangely mutilated, and is now only a wretched fragment. Several portions of painted glass are also inserted in the other windows of the chancel, which, together with the parts we have mentioned, and some costly monuments, make Leverington well worth a visit from all interested in our old ecclesiastical remains.—(*From a Correspondent.*)